IN THE CLAIMS

Please amend claims 1 and 72 as shown below. The following listing of claims replaces all prior listings.

1. (Currently amended) A reagent dispensing apparatus comprising:

a support frame;

a pressurized air source; and

a dispensing module removably attached to the support frame, the dispensing module comprising a self-contained pressurized fluid delivery subsystem;

wherein the fluid delivery subsystem comprises:

a plurality of reagent containers, each reagent container containing a liquid reagent;

an air manifold with a port for receiving an air supply line from the pressurized air source, and

a plurality of air delivery lines extending from the air manifold, wherein each of the plurality of air delivery lines is connected to a corresponding one of the plurality of reagent containers, each reagent container being configured to receive pressurized air through the air delivery line such that the liquid reagent within the reagent container is subject to substantially constant pressure for dispensing the liquid reagent,

a plurality of dispensing tips, wherein each reagent container being fluidly connected to a corresponding discrete fluid path terminating in a corresponding discrete dispensing tip, said dispensing tips being collectively arranged in a rectangular array of dispensing tips configured for dispensing into wells of an assay plate, each fluid path having a corresponding dispensing device, each dispensing device being adapted to selectively dispense a corresponding reagent through the corresponding dispensing tip into said wells in response to a corresponding actuation

signal, wherein the actuation signals are controlled by computer software to control the opening and closing of the dispensing devices for dispensing fluids substantially simultaneously into multiple corresponding target wells of the assay plate, the time intervals for opening and closing of the dispensing devices being less than the time required for the dispensing tips to move past the target wells; and

a motor drive system for controlling movement of an assay plate, wherein the motor drive system comprises a first drive and a second drive and moves the assay plate in a substantially continuous switchback pattern beneath the plurality of dispensing tips, wherein the first drive controls a horizontal movement of the assay plate and the second drive controls a vertical movement of the assay plate.

2. (Canceled).

3. (Previously presented) The apparatus of claim 1, wherein distances between centers of the dispensing tips are calculated to correspond to a timing algorithm associated with an assay plate having known dimensions.

4. (Original) The apparatus of claim 3, wherein the distance between the centers of adjacent dispensing tips is approximately 1.50 millimeters.

5. (Original) The apparatus of claim 3, wherein the distance between the centers of adjacent dispensing tips is approximately 2.25 millimeters.

6. (Original) The apparatus of claim 3, wherein the distance between the centers of adjacent dispensing tips is approximately 4.50 millimeters.

7. (Canceled).

8. (Original) The apparatus of claim 1, wherein each fluid path is less than approximately 25 centimeters in length.

9. (Original) The apparatus of claim 1, wherein each fluid path has a volume capacity of less than approximately 200 microliters.

10 (Original) The apparatus of claim 1, wherein each dispensing device comprises corresponding electrical leads for receiving the corresponding actuation signals.

11. (Canceled).

12. (Original) The apparatus of claim 1, wherein each dispensing device comprises a corresponding solenoid.

13. (Original) The apparatus of claim 1, wherein the dispensing module is attached to the support frame using quick-release clamps.

14. (Canceled).

15. (Original) The apparatus of claim 1, wherein the coefficient of variation of reagent concentration within wells of an assay plate after dispensing of reagents thereinto using the apparatus is less than approximately 2.6%.

16. (Original) The apparatus of claim 1, wherein the coefficient of variation of reagent concentration within wells of an assay plate after dispensing of reagents thereinto using the apparatus is less than approximately 5.0%.

17. (Original) The apparatus of claim 1, wherein the coefficient of variation of reagent concentration within wells of an assay plate after dispensing of reagents thereinto using the apparatus is less than approximately 10.0%.

18. (Original) The apparatus of claim 1, wherein the fluid paths each comprise a corresponding portion supported by a common dispensing head.

19-71. (Canceled).

72. (Currently amended) A reagent dispensing apparatus for dispensing a reagent into wells of an assay plate, the apparatus comprising:

a support frame;

a pressurized air source;

a motor drive system for controlling movement of an assay plate, wherein the motor drive system comprises a first drive and a second drive and moves the assay plate in a substantially continuous switchback pattern beneath the plurality of dispensing tips, wherein the first drive controls a horizontal movement of the assay plate and the second drive controls a vertical movement of the assay plate; and

a dispensing module removably attached to the support frame using quick-release clamps, the dispensing module comprising a self-contained pressurized fluid delivery subsystem, the self-contained pressurized fluid delivery subsystem comprising:

a plurality of reagent containers, each reagent container containing a liquid reagent, each reagent container being configured to receive pressurized air such that the liquid reagent within the reagent container is subject to substantially constant pressure for dispensing the liquid reagent;

a plurality of dispensing tips collectively arranged in a rectangular array configured for dispensing into wells of the assay plate and the distances between centers of the dispensing tips being calculated to correspond to a timing algorithm associated with an assay plate having known dimensions, wherein each reagent container being fluidly connected to a corresponding discrete fluid path terminating in a corresponding discrete dispensing tip, each fluid path having a corresponding dispensing device, each dispensing device being adapted to selectively dispense a corresponding reagent through the corresponding dispensing tip into said wells in response to a corresponding actuation signal, wherein the actuation signals are controlled by computer software to control the opening and closing of the dispensing devices for dispensing fluids

substantially simultaneously into multiple corresponding target wells of the assay plate, the time intervals for opening and closing of the dispensing devices being less than the time required for the dispensing tips to move past the target wells;

an air manifold with a port for receiving an air supply line from the pressurized air source; and

a plurality of air delivery lines extending from the air manifold to a corresponding one of the plurality of reagent containers.

73. (Previously presented) The apparatus of claim 72, wherein the distance between the centers of adjacent dispensing tips is approximately 1.50 millimeters.

74. (Previously presented) The apparatus of claim 72, wherein the distance between the centers of adjacent dispensing tips is approximately 2.25 millimeters.

75. (Previously presented) The apparatus of claim 72, wherein the distance between the centers of adjacent dispensing tips is approximately 4.50 millimeters.

76. (Previously presented) The apparatus of claim 72, wherein each fluid path is less than approximately 25 centimeters in length.

77. (Previously presented) The apparatus of claim 72, wherein each fluid path has a volume capacity of less than approximately 200 microliters.

78. (Previously presented) The apparatus of claim 72, wherein each dispensing device comprises corresponding electrical leads for receiving the corresponding actuation signals.

79. (Canceled).

80. (Previously presented) The apparatus of claim 72, wherein each dispensing device comprises a corresponding solenoid.

81. (Canceled).

82. (Previously presented) The apparatus of claim 72, wherein the coefficient of variation of reagent concentration within wells of an assay plate after dispensing of reagents thereinto using the apparatus is less than approximately 2.6%.

83. (Previously presented) The apparatus of claim 72, wherein the coefficient of variation of reagent concentration within wells of an assay plate after dispensing of reagents thereinto using the apparatus is less than approximately 5.0%.

84. (Previously presented) The apparatus of claim 72, wherein the coefficient of variation of reagent concentration within wells of an assay plate after dispensing of reagents thereinto using the apparatus is less than approximately 10.0%.

85. (Previously presented) The apparatus of claim 72, wherein the fluid paths each comprise a corresponding portion supported by a common dispensing head.